Listing of Claims

5. (Original) A system for organizing a series of pictures in an input video stream into at least one group of pictures (GOP), comprising:

a scene change detector operative to detect a scene change in the series of pictures and to classify a first picture following the scene change as a first intra-picture (I-picture) and to classify at least one other picture following the scene change as a predicted picture (P-picture) and to classify at least one second picture as a bi-directionally predicted picture (B-picture); and

a bit allocation module operative to determine whether a first GOP uses less than a predetermined target number of bits and further operative to allocate an unneeded bit to a second GOP in response to a determination that the first GOP uses less than the predetermined target number of bits.

6. (Original) The system of Claim 5, further comprising a bit rate controller operative to compare a previous macroblock of a first picture to a subsequent macroblock in a second picture and to determine that the subsequent macroblock is different than the previous macroblock.

7. (Original) The system of Claim 6, wherein the bit rate controller is further operative to determine a first criterion characterizing the relationship between the previous macroblock and the subsequent macroblock and to compare the first criterion to a first threshold value.

8. (Original) The system of Claim 7, further comprising a decoder operative to represent the subsequent macroblock in an output video stream, wherein the bit rate controller is further operative to instruct the decoder to represent the subsequent macroblock in an identical form as the previous macroblock, in response to a determination that the first criterion is less than the first threshold value.

9. (Original) The system of Claim 7, wherein the bit rate controller is further operative to instruct the decoder to represent the subsequent macroblock in a nonidentical form as the previous

macroblock, in response to a determination that the first criterion is less than the first threshold value.

10. (Original) An encoding system for compressing an input video stream having a series of pictures, the encoding system comprising:

a video encoder operative to receive the input video stream and an input control stream and to generate an encoded video stream;

a picture grouping module operative to receive the input video stream and to generate at least one adaptive picture grouping for the pictures in the encoded video stream;

a bit allocation module operative to receive the input video stream and to adaptively allocate bits among the series of pictures and to adaptively allocate bits among the adaptive picture groupings.

11. (Original) The encoding system of Claim 10, wherein the adaptive grouping comprises classifying the pictures in the input video stream as intra-pictures (I-pictures), predicted-pictures (P-pictures), and bidirectionally predicted pictures (B-pictures).

12. (Original) The encoding system of Claim 10, further comprising a bit rate controller operative to compare a previous macroblock of a first picture to a subsequent macroblock in a second picture and to determine that the subsequent macroblock is different than the previous macroblock.

13. (Original) The encoding system of Claim 12, wherein the bit rate controller is further operative to determine a first criterion characterizing the relationship between the previous macroblock and the subsequent macroblock and to compare the first criterion to a first threshold value and to instruct a decoder to represent the subsequent macroblock in an identical form as the previous macroblock, in response to a determination that the first criterion is less than the first threshold value.